G. E. S. IX-5]

Previous references

1929.
(Mar 2)

File No. 433

Serial Nos. 1—14

Later references.

Finy 433 (9 file 1528
1 8

GENERAL AND REVENUE SECRETARIAT

Serial Nos. 14.

Part B for May 1921

SUBJECT

Crumbling down of certain Carved images of the temple of Belur & Halebidu.

8(14) To. The Industrial Chemist
No 4163 of 20-5-21.

Requests to make certain experiments in order that the exact kinds of preservatives may be ascertained and to report the results thereof—

WD 2233- GPB—20,000—11-6 20

1337

G. R. S. III—1] 1917.

GENERAL AND REVENUE SECRETARIAT.

(Rev ; iii)

NOTES.

File No. 4 · 2 · 19

FILE HEADING.

Reports re ... crumbling down of Carved images at the famous Hoysala temple at Belur, in the Hassan Dist.

From

The Dy Comm., Hassan Dt

No. C 875-19 Dated 17.1.20 Received 22.1.20

Diary No. 1337	Enclos. /	Spare Copies. —	Serial No. /

BRIEF ABSTRACT OF LETTER.

Reports that the carved images in the famous Hoysala temple at Belur, are gradually crumbling down owing to the ~~the~~ growth of red and white moulds on them and requests that the matter may be referred to Govt with a view to get them ~~with~~ preserved

NOTES AND ORDERS.

1) Draft submd for appl or other orders.
C.S.
22/1/20. 24/1/20

2) Chett 27.1.20.

3) Hand Tremlett (Secretary) 28/1/20

4) Draft appd. Let a copy be sent to the Director of Archæology for his information.

28/1

807
28/1/20

NOTES—First Sheet.

G. R. S. III-2]

1337

General and Revenue Secretariat.

Revenue File No. 4133 of 191 7.

Serial No.

5 Issue of Re-Sabungat
U/ 29/1/20
AMP 29.1.20

2 To, The Ch. Engineer of Mysore & Director of Archeological Researches in Mysore No. 2292-3 dt. 30.1.20.
Requests to be so good as to have the images inspected & furnish his proposals for checking the deterioration etc &

6 Drafts issued and file resubmitted for Submission to the Dewan as desired by the Members. in para 4 of the note C.S. Supra.
3/1/20
31.1.20
AMP 2/2/20.

DEWAN'S OFFICE.
Recd. on FEB 3 1920
Reg. No. 5275

Dewan) Ref. Mun't
U/ 2/2/20
Seen well
7.2.20
File U/ 9/2/20
AMP 12

Note—Contn. sheet.

2619

G. R. S. III-2]

General and Revenue Secretariat.

Army File No. 433 of 1919.

Serial No. 3

Letter No 235 dated the 19th June 1920 from the Director of Archeological Researches in Mysore forwarding for information copy of a D.O. letter received from the Director General of Archeology in India and stating that his final report on the matter would be submitted to Govt later on after completing the investigations.

Submitted for perusal and orders. A copy of this letter may be sent to the Director of Archeology in India. Who may be asked to send the fragments to the Archl Assistant Mysore for the time being.

28/6/20

Secretary

6.7.20

130-150
6.7.20.

When I was at Belur last month, my attention was drawn to these graves & it appeared to me that it was preliminarily a matter for investigation by the Archeological Chemist in conjunction with the Director of Geology. I mentioned this to D.C. at the time & discussed with him

NOTE—Contn. sheet.

G. R. S. III-2)

General and Revenue Secretariat. | Army File No. 433 of 1919.

Serial No.

Messrs Jayaram & G. Shastry. These officers may now be addressed in the matter of the action taken initiated by the Director of Arch. re the services of Mr. Shastry will have to be obtained thro' the Director I.C. I do not think we need go to the Chemist of the Arch. Dept. of India unless we are forced to do so.

Asst
7.7.20.

Dy Supt.
7.7.20.

Asst Superintendent
Ch
8/7/20.

Asst 13/7/20

Superintendent (Offg)
Gen Assistant 13/7/20

298-298
13.7.20

14 draft approved.
The Director I.C. should be addressed to ask the Asst. Chem. I have revised the draft accordingly

Asst
14.7.20

Asst 14/7/20.

15/7

NOTE—Contn sheet.

G. R. S. III-2]

General and Revenue Secretariat. | Mun. File No. 433 of 1919.

Serial No.	
4.	The Director of Industries & Commerce. No. 258 dt. 20.7.20. Forwarding copies of letters (A/14813) in the matter & requesting to direct the Industrial Chemist to inspect the images in consultation with the Director of Geology & furnish, very early, proposals for the arresting the deterioration. No. 259 Copy to the Director of Geology. No. 260 Copy to Director of Arch. Research
5	Letter No M 797 dated the 22nd July 1920 from the Chief Engineer of Mysore, stating that either of the two transparent preservatives, which soak into the pores of the stone, harden these and protect the surface from the action of the moisture viz. "Syredimeyo's Stone Liquid" or "Ceresine", may be used with advantage to preserve the figures on the walls of the [illegible]

NOTE--Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat. | Irq File No. 433 of 1919.

Serial No.	
6	D.O. letter no 875-19/Sec. dated the 23rd July 1920 from the Dy Com—, Hassan Dt., stating that he learns that Mr Marshall has prepared a Compound of Arsenic for ~~Cases~~ arresting the formation of crusts on figures of stones from exposure and requesting early action being taken to have the preparation applied to the figures of the Belur & Halebid temples
	24.7.20 A Copy of the D.O may be forwarded to the Govt Bacteriologist — and also Copy of the Ch. Engr's letter (Secy)
	Asst 5/8/20 Put up a draft NJ 5/8/20
	8/8/20 Secy 9/8/20

NOTE.—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat.

File No. 433 of 1915.

Serial No.	
7.	To, Director of Industries & Commerce in Hyderabad. No. 662 dt. 19. 8. 1920. Forwarding Copies of letters from the Ch. Engr. & D.C. Hasain in the matter
8	Letter No 2997/286 dated the 31st August 1920 from the Director of Industries and Commerce in Hyderabad forwarding for information the notes of inspection of the Industrial Chemist of the images of the famous Hoysala temples at Belur and Halebid.
	The inspection note received as yet is a brief narrative of the impression of the Chemist regarding the causes of the deterioration of the stone of the temples at Belur & Halebid. Further report is awaited by the Chemist from Bombay after he has made scientific examination of the stone, the mortar &c. &c. collected by the Chemist from the temples at Belur & Halebid. The Chemist

NOTE—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat.

Revenue File No. 433 of 1919.

Serial No.

Suggests the fixing up of rails all round the temple with a view to prevent visitors from touching the images.

Submit for orders with a draft.

C.S.C.: 3/9/20

3/9/20 Rosery)

Chief Secretary 3/9/20

Chief Secretary) 4/9/20

1574-151 6.9.20

Sept. The further report promised by the Asst. Chem. may be awaited. If this is not received by the 25th inst. a reminder may issue.

What about the report from the Director of Geology? A reminder may issue to him.

11.9.20

25

Draft reminder submitted.

As per orders of the 11 instant

8.9.20

Rosery)

9-9-20

11-9

NOTE—Contn. sheet

984

G. R. III-2]

General and Revenue Secretariat.

Imp File No. 433 of 1914.

Serial No.	
1	Letter No 1760 dated 10.10.14 from Secretary of Legislative Council, Calcutta, regarding, inter alia, the question of the Hon'ble Official Members of the Council to attend the meetings of the Council.
2	For information. Further reference to the Secretary, if any, perhaps to answer.

10/11/20

P T.O.

NOTE—Contn. sheet.

G. R. S. III-2]

1 96

General and Revenue Secretariat.

Mines File No. 433 of 1919.

Serial No.	
10	D. O. No 20858 dated the 8th Nov 1920 from the Director of Mines and Geology submitting his views in the matter of arresting the decay of the carved images of the temples at Belur and Halebid.
	Submd for information and orders
	C.S. 16/11/20
	16/11/20
	For orders
	22/11/20
	Please see my note on the preventive and protective measures suggested by the Director. Has anything been attempted in the past in the manner suggested by him? What about future works?
	22/11/20
	23.11.
	The director suggests that sufficient protection may be provided for.

NOTE—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat.

11/W File No. 433 of 19 17

Serial No.

The carved work in rock at Halebeed and Bēlur from deterioration due to human agency as ~~has~~ deterioration due to natural agencies is nothing when compared with this. ~~He suggests that~~ The industrial chemist suggests that this protection can be given by having a railing or wirenetting around the walls and also by appointing ~~an director~~ official guide who may besides preventing the visitors from inflicting any injury on the carvings ~~he~~ may also show them ~~around~~ the important works of art in and around the temples.

32 The director also suggests that an expert Sculptor may be engaged for a short length of time to smooth the surfaces of the injured ~~fi~~ and mutilated figures in the temples. He suggests ~~the~~ chemical treatment of restoring and preserving the

By the Sylvester process he opines, further decay due to ~~the~~ conditions of the weather can be prevented. ~~He~~ proposes to have the ~~Exhibition~~ and bruised parts restored ~~as~~ by [illegible]

NOTE—Contn. sheet.

1041

12

G. R. S. III-2)

General and Revenue Secretariat.

Mcl File No. 133 of 1919

Serial No.

Fabardi Metallic Stone.

1) Exposure to smoke has ~~been the cause~~ to a great extent disfigured the beautiful works and the ~~director proposes~~ Industrial chemist proposes that the use of smoky torches should be prohibited and Washington lights used instead.

2) Apart from the red and white paints and lime washes referred to by the director no other attempts to have been made by anyone for preventing the decay. But even this ~~its~~ remedy was not absolutely inadequate and it rather helped instead of hindering the process of decay.

RL 25-11-20

2-12-20

To Secy)

36. No attempt in the ~~Attempt~~ direction pointed out by the Director seems to have been made in the past.

37. It is under Consideration

NOTE—Contn. sheet.

G. R. S. III-2]

General and Revenue Secretariat.

Chief File No. 1-1 of 19 19

Serial No.

38. Brief and Guide books.
Scientific matters referred to by the Director
do you think this Secretariat is in a position to offer any remarks.
39. May Dr Smith be Consulted?
Second Member) WJ 3/12/20

3191-103
6-12-20

40) There is no case concerning St. Saao. The steps we have taken are (1) to prevent further acts of vandalism by erection of barriers &c & greater case when visitors of an undesirable kind are about and (2) to check further weathering of chipped portions being redressed by skilful mason. The former may be done in consultation with the PWD & the local authorities, but the latter requires to be carefully considered before action is taken.

41) The further report does not seem necessary. It might be recorded. D.O.

Secl.
8.12.20

42) [illegible] 20

43) [illegible] 9/12

NOTE—Contn. sheet. R2.

~~1046~~ 1046 ~~5710~~

G. R. S. III-2]

General and Revenue Secretariat. | Mun | File No. 433 of 1919.

Serial No.	
	44. Submitted with a Draft. R 16/12
	45. For Redraft 16/12/20.
D. O. issued No. 2191	46. A fair draft is put up. The Chief Engineer's ~~letter~~ letter since received is also put up. From (Mr. Ley) AMT 18/12/20 The Chief Engineer of Mysore, Bangalore No. M 5236 dt 10. 12. 20. Forwards a copy of letter from the Archaeological chemist in India who suggests that the ~~may be~~ Govt of India may be requested to depute him for the purpose of visiting the temples at Belur & Halebeid since all conservation measures ~~are~~ ~~engineers~~ only when the local ~~engineers~~ are ascertained by an expert. Encls to his letter.
	47. Secys order on the P W D. Submit this to member today. R 17/12 Put to T. E. J. AMT 17-12-20
	(Mr. Ley) (Chief Member) 17/12/20 P. T. O.

NOTE—Contn. sheet.

1263

G. R. S. III-2.

General and Revenue Secretariat. | File No. of 19 .

Serial No.

3574-136
22-12-20

I do not think any consultation with the officers of the P of I is necessary. I think we ought to be able to do what is needed with our own Scientific officers. The letter of the C of I Arch. Chem. may be sent to our Industrial Chemist, Mr. the Director of I.R.S. for his information & the submission of the report for him as desired.

Pell
23.12.20

Submitted with a draft.

6/1/20.

(Today)

No letter is necessary. A memo will be enough.
27/1/21
Revise accordingly

7-1-21

12/1/21

NOTE—Contn. sheet.

R. S. III-2

General and Revenue Secretariat.

Misc File No. 433 of 1919.

Serial No.	
	Submitted [illegible]
	8/1/24
	Issue W/ 8/1/24
12	To, Industrial Chemist in Mysore thro' [illegible] No. 2574 dt. 15. 1. 1921 Sdo a Copy of the letter from the Tech. Chemist in India & the Chief Engr. of Mysore requesting daily submission of the report already called for from him.
13	Letter No 1460 dated the 30th April 1921 from the Industrial Chemist to Mysore submitting his Suggestions regarding the preservation of the Carved images of the temples at Belur and Halebeed Subd for orders C.S. 4/5/24 4/5/24 Secretary 11/5/24
5943-206. 12.5.21.	Seen. The Asst. Chem. may be asked to make some Experiments & ascertain the kind of preservative suitable for the purpose & that as

NOTE—Contn. sheet.

G. R S. III-2]

General and Revenue Secretariat.

Mysore File No. 433 of 1919.

Serial No.

know the result. There are Engineer officers in the districts as well as in the Mines & Commerce Dept & I do not think it will be difficult to get some pieces for Experiments also. I also think that the cost of making the Experiments will not be much either

Revd 13.5.21

Draft rep 13/5/21

Dft Sub for appl
C.S. 16/5/21 RG
16/5/21

Secretary Mysore 17/5/21

6059-56
17-5-1921.

Dft approved
Revd 18.5.21

Issue 19/5/21

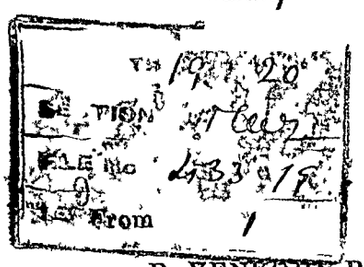
To, The Asst Chemist Incharge of Ind. & Commerce Mysore

No 4163 Dated 20 5 1921

Requests to make some experiments in order that suitable kinds of preservatives may be ascertained & the cost & the Govt

NOTE—Contn. sheet

DIARY No. 1347



DEPUTY COMMISSIONER'S
HASSAN DISTRICT.

Dated. Hassan, the 27th January 1920

B. VENKOBA RAO, Esq., B.A.,
Deputy Commissioner,
HASSAN DISTRICT.

To

T. E. Jayarama Iyar, Esq, B. A. B. L.,
Seceratry to the Governmemt of His Highness
the Maharaja of Mysore, Muzarai Department,
BANGALORE.

Sir,

I have the honor to state that the Sub Division Officer of Saklesapur, has reported in his letter No. H. C. 155-19 dated 17th December 1919 (copy of which is herein enclosed) that the carved images at the famous Hoyisala temples at Belur and Halebid are gradually crumbling down owing to a formation of red and white moulds on them, and that they require to be immediately remedied. I therefore request you to be good enough to refer the matter to experts with a view to see if they could be set right.

2. Meanwhile, I have asked the Sub Divisior Officer, Saklesapur, to forward an estimate for any known local remedies he may propose to adopt in the matter.

I have the honor to be,

S i r,

Your most obedient servant,

Treasury Assistant Commissioner

For Deputy Commissioner,
Hassan District.

(absent from Head a ters)

YGRS.

From

VENKOBA RAO, Esq., B.A.,

Deputy Commissioner,
HASSAN DISTRICT.

To

T. E. Jayarama Iyar, Esq, B.A., B.L.
Secretary to the Government of H:
Highness the Maharaja of Mysore,
Muzarai Department,
BANGALORE.

Dated
Despatched — 10th January 1920.
Received

General No. C875-19
No 8C

Enclosure No. one

SUBJECT.

I beg that the Carved
Images & the famous
Hoysala Lintels at Belur &
Halebede are protected by
Criminal Law & that a
Survey party & Archi-
tect be deputed at
once to take photos &
measurements of the
Sculptures & that a
Temple be immediately
erected for housing the
Sculptures brought to

Letter No. H. C. 155-19 dated 16/17th December 1919 from the Sub Division Officer Saklesapur to the Deputy Commissioner Hassan District.

.....

I have the honor to state that during my visits to Belur and Halebid I found that the carved images of the famous Hoyisala temples at these places were gradually crumbling down owing to the formation of red and white moulds on the Balapam stone carvings. If this is allowed to extend without any steps being taken to prevent the mould, these historic temples will be completely ruined ere long. From an examinations of the carvings in sheltered corners, it is seen that the carvings must originally have been covered with some sort of red paint, possibly red lead or cinnabar mixed with oil and wherever the paint appears, there is no mould. I think, it would be worth while trying a paint of cinnabar or red lead in linseed or any mineral oil, to all the stone carvings of the historic temples to preserve them from decay by the effects of the mould

The matter may however be referred to experts who may discover some means of effectively combating with this threatened destruction of these beautiful works of art of by-gone days.

-+++++++++++++-

" C O P Y "

For Deputy Commissioner,
Hassan District.

YGRS.

G. R. S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to....1337

Section Lunyore

File No. 433-19

Serial No. 2

GENERAL AND REVENUE SECRETARIAT

(VII)

the *191*

No. 2249/1/5 5/-11

Date of issue.....30.....1.....20.....

Signed by.....

To (1) The Chief Engineer of Lupare

(2) The Director of Archeological Researches in Lupare

(3) The ~~Director of Mines & Geo~~ logy

Sir,

I am directed to forward herewith a copy of letter No C 875-19 dated the 17th January 1920 from the Survey General, Hoesan D., together with a copy of its enclosure, reporting that the carved images at the famous Hoysala temples at Belur and Halebid are in a bad

over.

Crumbling down Brown to a formation of red and white mudstones on them and to request you to be so good as to have the matter inspected and to furnish Govt with your proposals for arresting the deterioration referred to thereon.

The matter may kindly be treated as very urgent and a reply sent within a fortnight

I have &c
W.F. 28/11/20
Secy to Govt
Irrig & Power

Irrig Engr
27/11/20

Chief Engr
27-11-20

C.E.
27/11/20

List of enclosures.

Copied by

Examined by

WD 1744—GPB—3,000—19-3-19

Office of the Director of
Archaeological Researches in Mysore,
BANGALORE, 19th June 1920.

DIARY No. 2647

34

From
The Director of
Archaeological Researches in Mysore,

To
T.E.Jayarama Iyer,Esqr.,B.A.,B.L.,
Secretary to the Government of
His Highness the Maharaja of Mysore, BANGALORE.

Sir,

With reference to your D.O.No.4320-21/Muz.433-19 dated 17th June 1920 regarding the proposals for arresting the deterioration of the carved images at Belur and Halebid temples, I have the honour to enclose herewith copy of D.O.No.470 dated 16th February 1920 from the Director General of Archaeology in India suggesting the chemical examination of the growth. A letter was addressed to the Sub-Division Officer, Sakalespur, enquiring whether any fragments with the growth on them can be procured and sent to this Office for being submitted to chemical examination. So far no reply has been received from him. On receipt of his reply, arrangements will be made for the chemical examination of the specimens of the growth and a report will be submitted to Government with the opinion of the chemical expert.

I have the honour to be,
Sir,
Your most obedient servant,

R. Rama Rao
Director of
Archl: Researches in Mysore
(in charge).

D.O.No.470.

Office of the Director General
Of Archaeology in India,

Agra, the 16th February 1920.

My dear Sir,

Will you kindly refer to your demi-official letter No.216,dated the 2nd February 1920,regarding the formation of red and white fungus on the carved images in the Belur and Halebid temples. If there are any detached fragments with specimens of the growth, I suggest that they should be sent to my chemical expert, Mr. Sana Ullah, Archaeological Chemist, Indian Museum, Calcutta, for examination, and we will then advise you what course to take. The suggestion of the Sub-Divisional Officer at Saklespur that the carvings should be covered with red lead in order to protect them from fungus is, of course, out of the question. The last state would be worse than the first! I am inclined to doubt whether the decay of the stone complained of by him is due to the growth on it.

Yours sincerely,

Sd. John Marshall

To R.Narasimhachar,Esqr.,
Director of Archaeological Researches
in Mysore, BANGALORE.

"True copy"
R. Rama Rao
Director in charge.

G. R. S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to 2619

Section Emergency

File No. 433-19

Serial No. 4

GENERAL AND REVENUE SECRETARIAT,

(VU)

, *the* *191* .

No. [illegible]

Date of issue 30-1-20

Signed by.....

To

~~(1) The Director of Mines and Geology in Mysore~~

~~(2) The Industrial Chemist~~

To the Director of Industries & Commerce in Mysore.

Sir,

I am directed to forward herewith Copies of the marginally noted Communications in the matter of the ~~alleged~~ decay of certain Carved

1) Letter no C 875-19/Elec. of 17-1-1920 (with a copy of its enclosure) from the Dy Comm, ~~Hassan~~ Dt.

2) Letter no 235 dated the 19th June 1920 from the Director of Archaeological Researches in Mysore, Bangalore, (with a copy of its enclosures)

images of the famous
Hoysala Temple at
Belur and Halebid Orissa
to a formation of red
and white marbles on
them and to request
you to be so good as to direct the Govt Chemist
to inspect those images in connection with
and to furnish Govt with
proposals for
arresting the deterioration,
referred to therein.

The matter may kindly
be considered as very
urgent and a reply
sent as early as
practicable.

I have the
11/13/20
Secy to Govt.
Archl Survey Dept

List of enclosure

Rec'd 14.7.20

Copied by

Examined by

8/7/20.

WD 86—GPB—60,000—15 11 16

P. T. O.

Copy to the Director of Geology.
Director of Archl

Memo 20

G.R.S. 27]

GENERAL AND REVENUE SECRETARIAT.

(Continuation sheet draft form.)

A copy of the above is forwarded, with compliments, to the Director of Archaeological Research, Mysore, for information.

By order

13/7/20

Secy to Govt,
Mysore Secl

8/7/20

WD 1219—GPB 10,000—35 (19

DIARY No. 1990

1920 21
SECTION Hec
FILE No. 4[illegible]
SERIAL

APHIC
ADDRESS
Mysorenorks

No. M. 797

24 JUL 1920

MYSORE P.W. DEPARTMENT.

CENTRAL OFFICE.

Bangalore 24th July 1920.

From

S. CADAMBI, Esq.,

Chief Engineer of Mysore,

Bangalore

To

T. E. Jayarama Iyer, Esq., B.A., B.L.,
Secretary to the Government of Mysore,
Municipal Department, Bangalore.

Sir,

With reference to your letter No. 2292 dated 30th Jan 1920. May 423-19-2
in the matter of submitting proposals for protecting the foundations of the piers at Baldwin and Mallikarjuna Bridges, I have the honour to inform you that the pointings of the masonry works have constructed have stood the test of time admirably well and show little decay except in very great.

2. So far as I am aware, there are no known methods of preventing the deterioration of the pointings of masonry works by the penetration of rain water except by keeping out the water from the stone, either by keeping the surface of the joints of masonry

3. Several such preservatives are in the market and the names of some of those which are generally considered to be [illegible] enclosed.

I would suggest your addressing firms selling them for the stone and asking them to supply any preservative suitable for

WD 1779—GPB—600—11-3-20

192

MYSORE P. W. DEPARTMENT.

No

From

THE CHIEF ENGINEER OF MYSORE,

Bangalore.

To

Dated Bangalore

Despatched

Enclosure No

SUBJECT

using the latter there may be no risk of disfiguring the surfaces.

5. I had a discussion in the matter with Mr. K.R. Seshachar, Principal, Engineering College, who as Executive Engineer, Hassan Division, is familar with the decay and also has carried out repair works to the temples in question and he agrees with me in the views expressed above.

I have the honour to be,

S i r,

Your most obedient servant,

Chief Engineer of Mysore.

A.N./19-7.

(1) Szerelmey's Stone Liquid.- This is a soluble glass which is painted on the surface and is slowly absorbed, penetrating the --- surface and forming a water proof layer impervious to moisture. It is transparant but can be coloured to any shade required.

(2) Cenosine, a refined wax may be applied by means of electrically heated sprayer or dissolved in spirits, used like an ointment and after 24 hours melted into the pores of the stone by a heater. This fills the pores of the stones and prevents the penetration of wet, and is reported on as being found permanently efficient in --- arresting decay in masonry.

Coton

A.H/22-7.

F. Baggallay,
A. Clerk Secretary
to the Board

DIARY No. 198

No. 875-19/Sec

1920 21

SECTION Sec

FILE No. 433-19

SERIAL No. 6

16/24/7/20

Misc Taka

S. VI—G/32]

SUBJECT.....

.....

.....

Diary No. of letter replied to... 1/7/20 198

GENERAL AND REVENUE SECRETARIAT
(VI)
, the 191 .

Date of issue 6-8-20

Signed by Mr J E Cyprian Arul

Section Enquiry
File No. 433-19
Serial No. 7

No. 662

To

The Director of Industries and Commerce in Mysore, Bangalore

Sir,

In continuation of this office letter No 258 dated the 20th July 1920, I am directed to forward herewith, ~~for the information of the Industrial~~

over.

Copies of the marginally noted Communications in the matter of the decay of certain Carved images of the Horyiuji temples at Nara and Kamakura and to request that they may be forwarded to the Imperial Museum

Chemist

W. 16/8/20

Secy to Govt.

Museum Dept

16/8/20

1) Letter No 797 dated the 22nd July 1920 from the Chief Engineer of Burma and Assistant Curator.

2) Letter No 875-49/8.L.C. dated the 2nd July 1920 from the Secy to Govt. Burma Education.

List of enclosures.

Copied by

Examined by

W. D.-G. P. B. 60,000 15 11 16

LEGRAPHIC ADDRESS "INDUSTRIES"

In reply please refer to
No... 2997/286

ENCL. No. Nil

433-19
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OFFICE OF THE
DIRECTOR OF INDUSTRIES AND COMMERCE, IN MYSORE.

Bangalore, the 31st August 1920.

1 SEP 1920

FROM

V. RANGASAWMY IYENGAR, ESQ., B. C. E.,
Director of Industries and Commerce in Mysore,
Bangalore (India)

To

The Secretary to the Government,

Muzarai Department,

Bangalore.

SIR,

With reference to your No: 258/Muz. 433-19-4 of the 20th July 1920 requesting me to direct the Industrial Chemist to inspect the Images of the famous Hoysala temples at Belur and Halebid and to --- furnish Government with proposals for arresting the deterioration, I have the honour to forward herewith for the information of Government Notes of inspection of the Industrial Chemist on the temples --- referred to. The further report promised in the last para will be submitted on receipt in this office.

I have the honour to be,

Sir,

Your most obedient servant,

V. Rangasawmy Iyengar

DIRECTOR.

B.V.

THE DETERIORATION OF THE CARVED IMAGES IN THE TEMPLES OF BELUR AND HALEBID.

--oOo--

I visited the Belur temple on the morning of 12th August and the Halebid temple the same after-noon.

The first thing that strikes me is that the deterioration of the images is not uniform. Whenever the original smooth polish is still preserved, there are no signs of any deterioration. Those images or portions of them that retain the original polish are still preserved in tact. Wherever the polish is absent there the process of disintegration is in progress. I am inclined to believe that the original smooth polish has been, and is, acting in some way as protection against "Weathering," resisting the combined action of air and moisture. Unless there is a rough surface or a crevice or a cavity, dirt and rain water cannot collect on the surface of the images, because the polish is so perfect and smooth and so "oily" to the touch that no water particles can adhere to the surface. When once rain water and dirt find a footing on the stone it is easy to conceive the beginnings of deterioration. There are traces of ammonium salts in rain water. There are traces of ozone in the air. Air and moisture are trying to re-act on the stone in the presence of sunlight. The action of all these is very slow, but the effects are cumilative. Whether the active agents mentioned above re-act or not, and if they do, in what manner can only be found out by careful research. If the images had not suffered at the hands of a ruthless enemy and at the hands of inconsiderate visitors, and if the original polish had been preserved without any scraches, I am inclined to believe that the images would have been preserved well.

It will be difficult to give an opinion how the "moulds"(lichens?) are assisting the deterioration of the images until they are examined by a competent botanist. Even here, one is apt to think that the lichens could not have had a footing on the images, if the original polish had been preserved well. There will be little doubt, I think, that the existing lichens are assisting(in however a slow degree) the disintegration of the soap-stone.

The foliated structure of the soap-stone out of which theimages have been carved, assisted by human agency is hastening the process. It is like this. The disintegration has commenced in a particular place and has advanced to a certain extent. The visitor who has been told of this disintegration feels the parts with his fingers and finding that the surface layer is yielding thoughtlessly removes the top layer and incidentally exposes a fresh surface to the weathering action. While collecting samples, I could remove layers of stone in many places. In order to prevent the collection of dirt in the crevices the temple authorities use the broom freely, and every time they do this, all the loosely sticking particles will be removed and fresh surfaces exposed to weathering action.

It was suggested by somebody on spot, that about twenty yearsago, the temple was given a lime wash, and he went on to show that wherever the lime wash had been given there the disintegration was greatest. This point requires confirmation expecially in view of the fact that soapstone is said to resist the action of alkalis (Thorpe's Dictionary of applied Chemistry Vol.V Page 381).

But the composition of soapstone varies within certain well defined limits, and whether this particular soapstone is susceptible to the action of alkali may be determined experimentally. I think there is quite a different explanation why the deterioration is greatest where the lime wash was given. The lime wash, it seems, so spoilt the beauty of the carved images, that some distinguished visitor to the temple ordered that all traces of the lime wash should be removed at once. Immediately the order was given, rubbing and scrubbing of the images went on assisted by a copious supply of water. It is easy to believe that under this brutal treatment the original polish of the images suffered heavily, giving room to weathering influences.

NOTE:- The lime wash had been given only to a height of about 12 feet. Above this height the images are generally in a good condition. These images are also generally inaccessible to visitors.

I have also taken samples of the red paint that are to be seen in some of the places. This sample was scraped out from one of the slabs that was unconnected with any image or its pedastal. This will have to be analysed before pronouncing any opinion on its prsence there.

What measures can be adopted to stop the deterioration of the images can only be decided upon after the analyses of the samples. A separate report will be submitted to Government on this.

I would suggest that immediate steps may be taken to put up a railing five feet from the walls so that visitors will not generally be able to touch the images. I saw a country fellow at Halebid tapping the images(at a height of about 8-10 feet from the ground) with a stick in order to show to the visitors that each

each image emitted a different musical note when struck Such things should not be allowed on any account. There must be an official guide at the spot whose business it will be to conduct the visitors round, explaining the various points of interest and at the same time keeping the visitors outside the proposed railing. Such official guides are common in Western Countries. Visitors may be conducted round four times a day at 8 A.M., 10 A.M., 2-30 P.M., 4-30 P.M. Responsible vistors may have special permits from the Deputy Commissioner of the District or the Amildar of the Taluq to go inside the railing for a more detailed inspection and study of Architecture. No visitor should be allowed to enter the temple premises outside these visting hours and no exception should be made without a special permit from the recognised authority.

The custom of lighting torches and holding them up to the ceiling inside the temple in order to show the carvings should be stopped and instead of torches Washington lamps of high candle power should be used for the purpose. The shade of this lamp can be designed to project sufficient light to illuminate the carvings properly.

These measures are easier of adoption at Halebeed than at Belur temple which attracts a number of devotees every day. A stricter watch should be kept at Belur Along with the proposed railing round the temple at Belur some sort of wire netting should be provided for, so that it will be more difficult to get within the prohibitted area.

I met one Pandit Narayanachar at Belur and he will make an admirable official guide to the Belur temple if his services can be secured by the Government.

At present the Archeological Department has kept a number of photographs of the temples for sale in the temples.fo I would suggest that picture post cards with real photos be made available to the visitors. These will be more popular than the present photos (12" x 14") and I am sure will bring in more revenue by their sale not only at Belur and Halebid, but throughout India.

The second report will be submitted after the examination of the samples in the laboratory.

----------oOo----------

Bangalore,
23rd Aug.20

Industrial Chemist.

MYSORE GEOLOGICAL DEPARTMENT

No. 698

984

Bangalore 14/10/... 1920

20-21

Geer.

438-19

Sir,

In reply to your D.O. letter No. 20/Miz. dated 6th October 1920, I beg to state that a sample of the rock used in the Halebid mandapam has been sent for complete analysis and that as soon as the chemical results are obtained my proposals for arresting the deterioration of the carved images will be furnished for the information of Government.

Yours obediently,

B. Rangnath

To

A. Krishnamurthy Iyer, Esq., B.A.,
Under Secretary to Government,
Mysore Department.

C.I.

OFFICE OF THE SMITHSONIAN INSTALLATION
NOV 4 1920
WASHINGTON

5710

Mysore Geological Department.

Bangalore, 8.-11.-1920

No. 868.

1046

10 NOV 1920

Dear Sir,

23729

With reference to your communication No.259/433-19-21, dated the 20th July 1920 and subsequent reminder thereon of date 6th October 1920, I much regret for the unavoidable delay in submitting the following note.

MYSORE Depts
10 NOV 1920

Inspection of Belur and Halebid Temples.

When there was a break in the S.W. monsoon, I took the earliest opportunity of visiting the temples at Belur and Halebid on the 14th & 15th of August 1920.

I carefully examined the temple at Belur and Halebid including the Jain temple at the latter place and brought a specimen of the carved stone from one of the rejected images thrown about in the temple precincts at Halebid.

On 17th August 1920 I sent a sample from the above specimen for a complete chemical analysis to Dr. T.V.Krishnayya and subsequently sent him a couple of polished rock slices of the same rock for etching and physical tests.

In a recent communication, dated 30th October 1920, Dr. Krishnayya writes to me that, as they have no gas at present owing to repairs to the gas installation, the promised results of the chemical analysis will not be ready for some time yet but that, from what he has seen of the rock, its weathering seems to be exceedingly slow and it would not be possible to determine the rate of such a slow process in the Laboratory.

Under the circumstances I do not see any good reason for any further delay in considering the subject which may be briefly dealt with under the following heads.

Class and character of the Stone Employed in the temple, at Belur and Halebid

The stone that has been used for the carved temples at Belur and Halebid is what is locally known as Potstone (Balapagu-kallu). Petrographically it falls under the class of rocks called the "ultra-basic rocks" and in particular to the variety of altered pyroxenites. It is one of the members of the Dharwar Schist formation and as such of great geological antiquity, a fact which in itself warrants to the rock possessing good weathering properties. Besides, the behaviour of the rock in the field and under the microscope fully justifies me to say that the rock is admirably suited for the purpose it has been chosen for.

For it is massive, homogeneous and even-grained and weathers well. It is very tough and soft and admirably adapted for decorative carved work. It also takes on a high grade of polish which can be best seen on some of the exquisite pillars in the interior entrance-court yard of the Jain Temple at Halebid.

The colour of the stone varies from a greenish-grey to a bluey-grey and the worked stone generally presents a dull sombre grey which is in keeping with all surrounding solemn subject. It was never intended for coating it with any superficial wash or paint, and the red paints and lime washes that have been tried in later somewhat remote or even recent years have not only tended to spoil the original design and beauty of the carved stones but have somewhat aided to deteriorate the stones.

2. Weathering and destructive Agencies.

The principal classes of agents which generally act upon the stones are (1) chemical agents, such as the acids and gases in the atmosphere, (2) mechanical agents such as wind, rain, heat & cold, (3) vegetable and animal agents, such as, lichens and worms and molluscs and (4) Human agents.

Judging from my examination of the temples at Belur and Halebid, it seems fairly evident that the natural chemical and mechanical agents have succeeded very little in their attempts of weathering, disintegrating and destroying the building stone of the temples.

There have been observed a few instances of sporadic growths of lichen, moss & grass, as on the exposed eastern wing of the temple at Belur; but they appeared to be of very minor and negligible importance and in fact probably acting more as protections from further weathering of the stone than as harmful agents.

The large and chief cause that has contributed to the deterioration of the stone is undoubtedly attributable to the vandalism, ignorance and inconsiderate, thoughtless mischievousness of the human agents.

With the exception of the untouchable filthy Panchamas, all sorts and creeds of visitors have found a ready ingress to these temples. They have from time to time broken, mutilated and damaged the carved stones, either spitefully or inconsiderately; and often with a vain-glorious spirit of immortalizing their visits have disgraced themselves and damaged the exquisitely carved and polished stones by scribbling and scratching their names and dates. Such names are legion and stand out as monumental disgraces on the two magnificent bull-carvings facing the Eastern wing of the Halebid temple.

Even the sacred taboos are forgotten and broken by sincere devoties who, as I have personally witnessed, climb on the carved images in order to gain vantage points of observation, especially to observe some delicately and minutely carved images on a miniature scale and which are above 8 feet or so from the floor level.

Preventive and Protective Measures :-

From the foregoing it will clearly be seen that preventive measures are of vital and immediate importance.

All such temples should come under the direct supervision, guidance and control of the Director of Archaeology.

It is desirable that they should be periodically examined by an Engineer of high responsibility and ability in order that necessary sound repairs could be attended to in time. (Repairs should be done in a way that they will not interfere with or spoil the original designs and beauty).

A highly skilled mason with artistic sculptural taste should be periodically engaged and all mutilated and bruised stones should, as far as possible, be dressed and fresh smooth faces put on them. As it has been observed that wherever the original even smooth surfaces, even though not polished, have been preserved, there the stones have weathered wonderfully well. It is where the stones have been broken and damaged, weathering and disintegration on such exposed badly pitted, bruised and uneven surfaces have left their marks.

It is highly desirable that proper guide books and pamphlets should be introduced and visitors afforded with facilities to obtain all correct information about the temples; necessary fees etc. may be charged and they would help towards better maintenance.

Strict measures should be enforced in regard to the supervision of the visitors who must be prevented from causing any damage, injury etc.

With regard to the protection and preservation of the stone there are various methods and processes recommended according to the nature and class of building stones employed.

Unfortunately

Unfortunately among the building and decorative stones employed and treated in the text-books, there is hardly any mention anywhere of the particular class of stone under consideration. Consequently it is not an easy matter to select and advise any particular method or process which would answer well to our requirement.

In fact most methods and processes that have been tried have been pronounced to be unsatisfactory and in a few cases, fairly good results have been obtained.

For our stone,- I do not think oils and varnishes and paints are desirable. I do not also feel inclined to recommend the use of solutions of silicates of Potash or Soda which are known as Kulhmann's & Ransome's processes respectively.

The following methods appeal to me more than any others:

a. Sylvester's Process :-

This consists of three fourths of a pound of soft soap to one gallon of water (boiling) and one half a pound of ~~Alum~~ alum in four gallons of water.

It is said to answer well in exposed situations and to require frequent renewal, though it is also stated that it has served its purpose well in New York for seven years without renewal.

b. White wax dissolved in double distilled camphine.

This is said not to spoil the natural colour of the stone.

c. Taberd's Metallic Stone. A french invention and is a natural stone of Trachyte origin reduced to powder.

The

The stone is restored to its original condition by mixing the powder with an acid which softens and reunites the molecules without decomposition.

I should advise a and c being tried - a would serve as a general wash and protective and c would do well for restoring badly weathered and damaged portions.

The stone in the temple interior should be first cleaned and any further exposure to fumes of smoke, gas etc. should be prevented by the substitution of better lighting arrangement in place of smoky torches etc.

Yours sincerely,

B. Jaya Rao

The Secretary to the Govt. of H.H. the Maharaja
of Mysore,
Muzrai Department.

1263

20 21

Rev

Rev. M 5236
En 1

Mysore Public Works Department,

Central office,

Dated Bangalore, 10th December 1920

From

S. Cadambi, Esq.,

Chief Engineer of Mysore,

B A N G A L O R E.

To

T. E. Jayarama Iyer, Esq., B.A., B.L.,

Secretary to the Government of Mysore,

Muzrai Department, Bangalore.

Sir,

Adverting to correspondence ending with this office No.M.797 dated the 22nd July 1920, in the matter of suggesting remedies for arresting the deterioration of the images at Belur and Habibid temples etd., I have the honour to forward herewith, for such action, as may be considered necessary, a copy of D.O. letter No.102 A/C dated the 1st December 1920, received from the Archaeological Chemist in India, Calcutta, stating that the local conditions have an important bearing on all conservation measures and these could only be ascertained by an actual visit to the site and suggesting that the Government of India may be requested to depute him for the purpose.

I have the honour to be,

Sir,

Your most obedient servant,

For Chief Engineer of Mysore.

J.R.10th.

D.O.letter No.162/A.C dated the 1st December 1920 from the Archaeological Chemist in India to the Chief Engineer of Mysore.

Please refer to your D.O.No.217 of the 25th November regarding the decay of the Hoyisala Temples.

I regret it is not possible for me to offer any suggestions to counteract the decay without a previous visit to these temples. If you could send me some portions of the affected surface, certain preliminary tests can be made in my laboratory which will throw some light on the problem. The local conditions, however, have an important bearing on all conservation measures and these can only be ascertained by an actual visit to the site. I would therefore advise you to request the Government of India to depute me for this purpose as soon as convenient.

True Copy

Assistant Secretary to Government,

Public Works Department.

J.R.10th.

Rly

File No. 433-15

Serial No. 12

R. S. 26]

Diary No. of letter replied to 1263

No.

General and Revenue Secretariat

( )

, *the* 191 .

Date of issue ..... 17 .....

Signed by .....

~~To~~

Copy of D. O. Letter No 162/A.C. dy 1.12.20 from Mr. Chemist in Index to the Chief Engineer of Mysore.

(Here type the letter)

Copy of the above is forwarded to the Asst Chemist in Mysore for information through the Director of P.W. in ---.

over.

SUBJECT.

With the ref. report from the Asst Chemist Mysore, the report due from him may be expected.

17/12/20

List of enclosures

Copied by

Examined by

GPE—20 C0 —10 10 14

Government Soap Factory, Bangalore.

S. G. SASTRY, Esq., B.A., M.Sc., (Lond) F.C.S.,
INDUSTRIAL CHEMIST.

70177

Office of the Industrial Chemist in charge of the Government Soap Factory.

No 1060 GEN & REV. SECTT
ENCL
2 - MAY 1921

Bangalore 30-4-21. 192

DIARY No. 2...

SEC.. W 21
FILE No MAY
SEC. 428-19

TO

The Secretary to Government

Muzrai Department,

General and Revenue Secretaria

Bangalore.

Through The Director of Industries & Commerce,

Mysore,

Bangalore.

Sir,

Subject;- The Deterioration of Carved Images at Belur and Halebid.

I have the honour to report that I have carefully gone through the analysis-results furnished by the Senior Chemist of the Department of Agriculture.

I think a coating of some preservative may be tried on in this connection I beg to bring the following points to your kind consideration.

(1) The tests should first of all be made on one or two images only at three different places, namely at Belur, Halebid and Bangalore.

(2) The Duration of the test should be at least one year.

(3) The exact kind of preservative to be employed should be decided by a competent Chemist, in consultation with an Engineer if necessary.

(4) The preservative should not be such as to require renewal ~~per~~ frequently.

(5) The preservative should be transparent and when applied should form only a very thin film on the surface of the image and should be impervious to water.

(6) The preservative should be capable of forming a very tenacious and elastic film, that will not be affected by the pattering of rain drops on it.

The above will give an idea as to the main considerations involving the use of a preservative.

In my original report I suggested a few ~~preservative~~ preventative measures that may be adopted for the preservation of the temples, especially from inconsiderate treatment at the hands of Visitors. These may kindly be considered as urgent and given effect to.

I have the honour to be,

Sir,

Your most obedient servant,

S. H. Boston

Industrial Chemist.

Dy

G. R. S. VI—G/32]

SUBJECT.....

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Diary No. of letter replied to 2282

Section Industries
File No. 433 of 19
Serial No. 11

General and Revenue Secretariat
(VII)
, *the* *191* .

No. 4163

Date of issue 20th May 1921

Signed by Mr T.E.J. Iyer

To The Industrial Chemist
to Mysore, thro' the Director
of Industries to Mysore

Sir,

With reference to the Cor
respondence ending with
Your letter No 1960 dated
the 30th April 1921 Sub
mitting a report on
the deterioration of the

over.

Carved images at Bebu
and Habbled, I am directed
to request you to make some
experiments to ascertain the
kind of preservative suitable
for the preservation of the
Carved images of the temples
in Question and to Communi-
-cate the result to Govt.

There are Engineer officers
in the District as well as in
the Industries and Commerce
Department and it is
hoped that no difficulty
in getting some figures
for experiments will be
experienced.

It is presumed that the
cost of these experiments
will not be much.

I have &c

17/5/21
Secretary to Govt
Industries Dept

17/5/21

17/5/21

Who can be consulted by you if necessary,

Where will be

the experiments to be made

Plan

Ls 5 - 4

List of enclosures.

Copied by

Examined by